Boeing Commercial Airplanes
Comments on
"Fuel Tank Safety Compliance Extension (Final Rule) and Aging Airplane Program Update (Request for Comments)"

Fuel Tank Safety Rule – Extending Compliance Date

Boeing supports the FAA's action to extend the operational compliance date from December 6, 2004, to December 16, 2008. We also support aligning this effort with the Aging Airplane Program and believe that, by doing so, the FAA addresses operator concerns with the difficulties in complying with major airplane inspection and maintenance programs using conflicting schedules.

We also appreciate the clarifications concerning "actual" versus "delivered" airplane configuration, and we strongly encourage the FAA to release Policy Statement PS-ANM100-2004-10029 as soon as possible.

In addition, we strongly recommend that the "ad hoc" group that previously worked on the proposed Advisory Circular be reconvened to work on and propose a common process for Critical Design Configuration Control Limitation (CDCCL) application and "non-compliant but not unsafe" SFAR 88 items. This work will ensure that there is a common and consistent application of the Policy Statement for all airplane models. This also will support accomplishment of the FAA's intention for original equipment manufacturer's (OEM) data to be available to the operators by December 2005, which, in turn, will support the requirement for operators to have FAA-approved maintenance plans in place by December 2008.

We applaud the FAA's efforts to align compliance dates and amend present rules to achieve synergy between the existing and proposed rules. However, we are disappointed that the FAA is only now proposing to provide guidance to the design approval holders in order for them to achieve compliance with SFAR 88. Release of this information concurrent with any mandate is crucial for the industry to achieve compliance in a timely and efficient manner. We recommend that the FAA consider releasing policy and associated guidance concurrent with, or within 3 months of, any future rule. We would expect that any policy, guidance, schedule, or penalty proposed by the FAA would include public review prior to implementation.

Review of Aging Airplane Program

Enhanced Airworthiness Program for Airplane Systems (EAPAS): Boeing concurs with the approach that the FAA has proposed concerning enhancement of wiring maintenance, consolidation of existing regulatory references, and the addition of new certification rules -- if said approach aligns with the recommendations proposed by the Aging Transport Systems Rulemaking Advisory Committee (ATSRAC). We have taken the lead in advising our customers of the ongoing ATSRAC activities, and have encouraged voluntary accomplishment of the recommendations put forth by that committee. The FAA should exhaust all efforts to ensure that whatever voluntary

efforts accomplished to date that were based on ATSRAC recommendations comply with the EAPAS rule.

For reasons discussed at length below, however, we strongly oppose the FAA's proposal that design approval holders be required to develop enhancements to maintenance information where an unsafe condition has not been shown to exist.

Aging Airplane Safety Rule: Boeing supports the May 2004 tasking of the Aviation Rulemaking Advisory Committee (ARAC) and the proposed extension of the rule from December 5, 2007, to December 20, 2010. We also support the intent to clarify the rule and lessen the burden of the effort on the operators, on the design approval holders, and on the FAA without degrading the safety of the fleet.

Widespread Fatigue Damage: Again, for reasons discussed at length below, Boeing opposes the proposal that would require the design approval holder to develop the necessary data and documentation within a specified timeframe.

However, we support the FAA's withdrawal of the 2002 Notice of Proposed Rulemaking that would have mandated a corrosion prevention and control program.

New Requirements for Design Approval Holders

- FAA INTENTIONS: In the Final Rule, Request for Comments, the FAA discusses its intention to change Part 25 to place an ongoing burden on design approval holders. The FAA states:

  > *" ... for future operational rules where operators must rely on data and documents from design approval holders, we will mandate that the design approval holders' data or documents be developed by a specified date."*

  This new requirement would change the regulatory intent of 14 CFR Part 25 and would have the effect of transferring some of the continued operation regulatory responsibilities from the operators to the design approval holder, essentially until that design approval has been rescinded by the FAA.

- ANALYSIS OF THE FAA INTENT: The FAA's stated intent is very broad and has several separate and intertwined issues, some of which are discussed below. These issues not only cloud the regulatory responsibilities between the design approval holder and the operator, but may impact present and future commercial arrangements between those parties.

  Several places in the published document, the FAA speaks of documents "being developed" by a to-be-specified date. It is very important to recognize that, before the industry can properly and fully comment on this intention, there must be a clear understanding of the word "develop." In other words, does the data need to be in the final, FAA-approved form, or is basic data sufficient if that is all the operator needs to meet its regulatory responsibility?

  Historically, operational rules require the development of systematic approaches that involve considerable discussion with all parties. These discussions lead to

maintenance program changes that an operator would incorporate into operations specifications. Such programs go much further and are far more complicated than supplying basic data. Examples of such programs would include the Supplemental Structural Inspection Program (SSIP) and the Repair Assessment Program (RAP).

What the FAA has avoided in its statement is any reference to the type certificate holder providing the data or documents to anyone. If the FAA were to consider requiring that the data or documents be provided to the operators, then it must consider significant additional regulatory and commercial issues, which should be included in any future rulemaking or guidance material.

Boeing requests that the FAA explain in any future regulatory proposals what methods, both in type and scope, the FAA anticipates the design approval holder will have to use to show compliance with any proposed regulation. This is necessary for us to properly comment on the cost impact of the proposal, and to ensure that the regulatory burden is properly defined by the FAA and understood by the industry.

- TITLE 49 CONSIDERATIONS: The first issue that must be assessed is whether or not the FAA has the statutory right to add a requirement, as a condition of initial design approval or the continued holding of a design approval, that data and documents, related to future rulemaking by the FAA must be developed by the design approval holder.

  - **Section 44704** ***("Type certificates, production certificates, and airworthiness certificates")*** deals with the issuance of type certificates. It states, in part, that the FAA Administrator "shall issue" a type certificate when the Administrator finds, among other things, that the product "meets the regulations and minimum standards prescribed under section 44701(a) of this title."

  - **Section 44701(a)** ***("Promoting safety")*** authorizes the Administrator to prescribe:

    - "Minimum standards required in the interest of safety for appliances and for the design, material, construction, quality of work, and performance of aircraft, aircraft engines and propellers;"
    - "Regulations and minimum standards in the interest of safety for inspecting, servicing, and overhauling aircraft, aircraft engines, propellers and appliances ...;"
    - "Regulations and minimum standards for other practices, methods, and procedures the Administrator finds necessary for safety in air commerce and national security."

  The last bullet, which is Section 44701(a)(5), grants the Administrator very broad powers to regulate safety in air commerce. Requiring design approval holders to develop ongoing continued operational safety data or documents might easily fall under the general category of "other practices, methods, and procedures the Administrator finds necessary for safety." Thus, the FAA could make an argument that Title 49 grants the Administrator the authority to implement what it is intending.

On the other hand, in accordance with section 44701(a)(5), the FAA must show that the scheme it proposes is, in fact, "necessary for safety," as opposed to just being a more convenient solution to a dilemma faced by the FAA and operators, or a more efficient organization of the regulations. There are a variety of methods available to operators to meet their continued operational safety requirements, such as the use of third-party modifiers and engineering centers; so, the FAA must show that, in each case, its preferred solution is actually "necessary for safety."

The FAA should pursue non-regulatory solutions first. The FAA must make it clear, in the specific regulatory proposal, exactly what problem it is trying to solve and make the case that its proposed solution is "necessary." There have been cases in the past, such as the conversion of Class D to C cargo compartment rule and SFAR 88, where the FAA has been unhappy with the time it took for the design approval holders to develop data and documents to assist the operators in meeting regulatory compliance dates. Some of those problems were a result of unrealistically short compliance dates that did not take into consideration the other conflicting priorities the design approval holders had. Making unrealistic dates mandatory will not solve the issue the FAA is trying to address. The FAA should develop a process to more fully understand the time constraints associated with developing compliance data and documents, and establish compliance dates for the air carriers that are more reflective of that reality.

Many times the regulations imposed on the operators have long compliance periods, in recognition of the difficulties such rules impose on the aviation system. Sometimes other FAA regulations or safety priorities arise during those compliance periods that divert resources from original objectives and place them on more current objectives. There is no process in FAA rulemaking that attempts to measure this cumulative burden. We maintain that non-regulatory solutions should be aggressively pursued by the FAA, working in close cooperation with industry, before more regulatory burdens are imposed on the industry.

- A CHANGE TO THE BASIC INTENT OF PART 25: The intent of Part 25, as well as other airworthiness standards specified in Subchapter C of Chapter I of Title 14, has been unwavering for over half a century. Section 25.1(a) states, "*This part prescribes airworthiness standards for the issue of type certificates, and changes to those type certificates ... "* and limits its applicability to transport category airplanes. Parts 23, 27, 29, 31, 33, and 35 have identical language to that quoted above, for their corresponding section XX.1(a).

  Except for requirements related to Instructions for Continued Airworthiness (ICA) and the Airplane Flight Manual (AFM), Part 25 does not place a burden on the type certificate holder to provide any data or documents to the operator of an airplane type certificated under Part 25. The ICA is required prior to the delivery of the first airplane or issuance of the first standard airworthiness certificate, whichever occurs first. The AFM is required to be furnished with each airplane.

  The ICA and AFM reflect the as-delivered configuration of the airplane and have been found to be acceptable by the FAA, except for the Limitations section within each manual, which must be approved by the FAA.

Nowhere does Part 25 specify that changes to the AFM **must** be provided directly to owners/operators; which is because the stated purpose of Part 25 is to specify appropriate airworthiness standards for the issuance and revision of type certificates. These are one-time requirements because they apply to the as-delivered type design, and other regulations place the burden on the owner/operator to make appropriate changes to the AFM when they change a particular airplane type design. Under §21.50, changes to the ICA are required to be provided to owners of previously-delivered airplanes when the design approval holder makes a change to a previously-issued ICA. New ICA documents, based on new designs, are not required to be provided to owners of previously-delivered airplanes. That is because an ICA relates to a particular design, or a particular serial-numbered airplane, and Part 25 only provides standards for the issuance of type certificates, not their continued maintenance.

In developing the requirements for an ICA, the FAA made a distinction between:

(1) what is required to obtain a type certificate under Part 25, and

(2) what ongoing burden the type certificate holder has once the airplanes are in service.

The burden to provide changes to the ICA was placed in Part 21, not Part 25. Boeing is very concerned about the FAA changing the basic intent of Part 25, as it sets an unbounded precedence to place regulatory burdens on the design approval holder for as long as a particular model is in operation, even after the design approval holder has ceased to exist. Should the FAA choose to proceed with rulemaking, it appears far more consistent to place the intended requirements within Part 21, the certification procedures, than within Part 25, the airworthiness standards.

Another reason for not placing the requirements in Part 25 is that the holder of a TSO is also an equally-affected design approval holder, and TSO requirements are not found in Part 25.

- FAA TO DECIDE WHEN OPERATORS MUST RELY ON OEM DATA: The stated intent by the FAA is that:

> *" ... for future operational rules where operators must rely on data or documents from design approval holders, we will mandate that the design approval holder's data be developed by a specified date."*

Each word in that statement of intent is important, and the FAA must be very clear in any future rulemaking as to its specific intent.

With respect to the phrase, *"future operational rules,"* there are no bounds. It does not restrict its intent to only those operating rules where additional retroactive safety standards are being applied to the in-service airplanes. This statement is very broad in its intent, and could literally mean any change to an operating rule, such as requiring more detailed weight and balance data. We request that the FAA clarify whether the changes proposed for Part 25 will apply to only the aging

airplane program or to all possible future programs. We also request that the FAA define how it intends to amend Part 25 to encompass these future programs.

The phrase *"where operators must rely"* poses an interesting dilemma for the FAA and Department of Transportation. The airlines are free to contract with whatever sources they deem appropriate when making day-to-day business decisions, and frequently have sought out sources other than the design approval holder when faced with retroactive airworthiness requirements. Likewise, the design approval holder is free to enter into financial agreements with its customers to provide data they might need to meet their regulatory responsibilities. The FAA's intended action would place the government in the position of making a decision on when the design approval holder is the only source of viable data or documents. That places the government in the position of regulating commercial air commerce financial interests, something that was supposedly abandoned with deregulation.

If the FAA maintains it has the right to regulate the commercial interests of the design approval holders and operators, then we request that the FAA make the case that the data and reports necessary for the operator to comply can only be produced by the design approval holder. In the case where others in the aviation system possess the ability to provide adequate substantiating data to the operators, in fairness, the FAA should refrain from regulating only the design approval holders.

Clearly, the example of a weight and balance document is one operating rule where there are many sources of acceptable data and documents, not just the design approval holder. It is true that the design approval holder may be the most expeditious source of some compliance data, but it is not the only source capable of developing compliance data in every case. More clarity is needed as to what type of operating rules this stated policy will apply to, and the basis on which the FAA would conclude that the design approval holder is the only source of the data.

- BURDEN MUST ALSO BE PLACED ON STC, TSO, AND PMA HOLDERS: The stated intent is to place a regulatory burden on "design approval holders." The FAA does not distinguish between different kinds of design approval holders, nor should it; so, an appropriate burden must be assumed by each and every design approval holder. That would include the type certificate (TC), supplemental type certificate (STC), Technical (TSO), and Parts Manufacture Approval (PMA) design approval holders, should their approved design be related to an operating rule deemed by the FAA to require a design approval holder to develop data.

  The STC holders must share the same burden under any FAA proposal as the TC holder, since they have essentially the same design and continued operational safety responsibilities as the TC holder. STC modifications can be very extensive, including such things as adding cargo doors, converting airplanes from passenger to all-cargo operations, or upgrading cockpit designs.

  It is also important that an appropriate regulatory burden be placed on the TSO design approval holders as they alone possess the knowledge necessary to develop the data and reports for their FAA-approved products. A PMA is also a design approval and PMA holders must assume this regulatory burden.

  We request that any upcoming associate rulemaking take this into consideration.

- ADDITIONAL AIRWORTHINESS REQUIREMENTS BELONG IN OPERATING RULES: When the FAA has decided to raise the level of safety for airplanes in service (as opposed to declaring an unsafe condition), it has always done so by placing the requirements in the appropriate operating rule. Subparts J and K of 14 CFR Part 121 are good examples of additional airworthiness requirements placed on the operator. The additional requirements are usually related to the operation of the airplane, often prohibiting operation if certain equipment is not installed.

  In concert, the FAA has not placed an associated regulatory burden on the design approval holder when it issues retroactive safety standards. Under section 21.21, the FAA must issue a type certificate when a design complies with the airworthiness requirements in Subchapter C of Title 14. It specifically excludes compliance with any additional airworthiness requirements in the operating rules as a condition for issuance or change of a type certificate. The FAA frequently requires different things for different types of operations, and it would be inappropriate for every airplane to incorporate those individual operational requirements when they are type certificated. Boeing presumes this to be one of the basic reasons why the FAA has unilaterally placed additional airworthiness requirements in the operating rules.

  Another reason for putting airworthiness requirements in the operating rules is that it is the most efficient means to improve the level of safety of the product over time. We consider the FAA's interpretation of section 44709 to form the foundation of the FAA's approach. Adding new requirements to an existing type certificate, as a condition of continued validity of that type certificate, is essentially the same as saying the old type certificate is invalid and a new type certificate must be issued. The FAA has a long history of mandating changes to a type certificate only when an unsafe condition exists (to bring the airworthiness of the airplane up to its certificated level of safety), and not because it wants to generally upgrade the level of safety for in-service airplanes. To make a change in this long-standing regulatory practice, the FAA must explain in any future rulemaking what safety benefits are derived from placing this additional regulatory burden on the design approval holders, separate from the benefits to be derived from placing a regulatory burden on the operators.

  With the proposed change to Part 25 discussed in the Federal Register notice, it appears that the FAA intends to change its historical practice with respect to design approvals. It appears the FAA wants to place a continuing burden on the design approval holder as a condition for continued validity of a design approval. Any new requirement placed on a design approval holder would change the conditions under which that certificate remains valid, not because of an unsafe condition, but because the FAA wishes to raise the general level of safety of airplanes in service. Boeing's concern is that, if the FAA begins requiring changes to design approvals (certificates) for upgrades in safety, as opposed to declaring an unsafe condition, it creates significant uncertainty about any future responsibilities a design approval holder might inherit.

- AN SFAR IS MORE APPROPRIATE: The FAA specifically concludes that Part 25, rather than a Special Federal Aviation Regulation (SFAR), is the appropriate part in which to place this burden on design approval holders; however, it gives no

additional information explaining why it reached this conclusion. Boeing maintains that an SFAR is the right type of regulatory action for general upgrades in safety. The development of data and reports in support of improving the operational safety of in-service airplanes by a specified date is a regulatory time-limited burden. SFARs generally include a "sunset date" that would guarantee that the required data would have been developed for all airplanes. Elimination of old, unnecessary rules from Part 25 or any other Part, would require separate regulatory action that the FAA is ill-positioned to remove because of resource limitations.

- EACH IMPOSED BURDEN MUST BE ANALYZED: The FAA has expressed its desire to change Part 25 to place a burden on the design approval holder. It is unclear if the FAA is intending to make a single change that is automatically triggered when an operating rule is issued, or create the regulatory structure and basis within Part 25 to accommodate specific requirements as each new operating rule is proposed.

  The FAA must define the cost burden and expected benefits associated with any particular rule. For that reason, it cannot issue a single rule that automatically imposes a burden for undefined future operating rule changes, since it will have no cost data on that future burden. Thus, each time the FAA chooses to place a burden on the design approval holder when an operating rule is issued, it must propose a specific change, applicable to the design approval holder, and conduct the appropriate regulatory analysis. Additionally, the regulatory analysis should separate operator and design approval holder cost and benefits, and develop a separate cost/benefits analysis for each affected party of the regulation. Since the FAA is also charged with looking at alternative regulatory options, it should establish the cost and benefits of compliance data and documents coming from sources other than the design approval holder. We request that the FAA clarify why a change to Part 25 is preferred over the use of an SFAR, and how that choice better solves its regulatory concerns.

- GENERATING DATA VS. USING DATA: The FAA has not stated an intention to require operators to use any of the data that the design approval holder would have to generate. This omission is entirely appropriate, as the FAA does not have the authority to specify from what source an operator must obtain its compliance data. With no authority to specify the source of compliance data, it is unclear where the FAA derives its authority to specify which parties must generate compliance data for other parties.

  Any requirement for a particular party to generate data has the possibility of changing business arrangements between operators and design approval holders, which is solely a commercial business issue not associated with a safety issue. It raises the question of whether or not a design approval holder has the option to choose not to develop specific data because it knows others are capable and willing to do it. Requiring a design approval holder to duplicate what others are equally capable of doing constitutes an unnecessary regulatory burden.

  In future rulemaking on this matter, we request that the FAA be clear on whether or not the design approval holder, working through or with others to generate necessary data and documents, would constitute compliance with any proposed requirements.

- "DATA" NEEDS TO BE DEFINED: We also request that the FAA be clear on what constitutes data or documents that are to be relied on by the operators:

  - ⇨ Is it final, approved type design data consistent with the in-service condition of each affected airplane?

  - ⇨ Is it simple basic data, such as weights and internal loads, that the operators can use in their own analysis or contracts with third parties? Or

  - ⇨ Is it integrated maintenance programs that operators can adopt into their operation specifications, like the SSID and RAP programs?

  How ever the FAA defines data and documents, it has the possibility of changing the economic arrangements between the design approval holder and the operator. The cost and benefits of those changes must be accounted for in the FAA regulatory analysis associated with each proposed operating rule that places a burden on the design approval holder.

- AIRPLANE CONFIGURATIONS VARY IN-SERVICE: The FAA must recognize the difference between an "as-delivered" airplane reflective of the type design certified by the design approval holder, and the "in-service" configuration of any particular airplane. After a few years, literally every in-service airplane of a given type design has a unique configuration because of repairs, alterations, and modifications, many of which are significant. The operator has the burden of showing that each unique airplane configuration complies with any new airworthiness operating regulation. The design approval holder, on the other hand, is only responsible for the airworthiness of the airplane configurations it has delivered.

  Boeing considers it inappropriate for the FAA to place a burden on the design approval holder to develop data for each configuration of its airplanes that exist in service. We believe that the FAA has recognized it has no authority in that area. Furthermore, much of the work that the design approval holder encounters when it assists the operators in complying with retroactive regulations (such as secure cockpit doors), consists of modifying general model-specific data and designing solutions to specific in-service serial number airplanes. Since there is no current legislation allowing the FAA to place a regulatory burden on the design approval holder for changes others have made to their type designs, we request that, in any future rulemaking action, the FAA quantify how this affects the safety objective by placing this additional burden on the design approval holder.

  The design approval holder frequently works with the operators of its products to develop data and documents to support unique airplane configurations that a particular operator may have. Those data and documents should not be a part of the regulatory burden the FAA is intending to place on design approval holders. It is important to distinguish those data and documents that address unique in-service airplanes, and clarify that the time-related regulatory burden would not apply to the design approval holder for developing such data or documents.

  In addition, placing a requirement on design approval holders within Part 25, without any further clarification, would make it applicable to all delivered airplanes. Should the FAA proceed as it is proposing, it is essential that it identify exactly what

airplane models the proposal would apply to, recognizing that changes to the operating rules only apply to airplanes operating under the U.S. regulations. Operating U.S.-approved designs under foreign registry should be exempt from proposals of this type, so there would be no associated requirement on the design approval holder to generate data.

- ENFORCEMENT POLICY: Since the stated intent of upcoming regulatory action adds a new regulatory scheme on the design approval holder, it is important for the FAA to define its enforcement policy should it conclude the design approval holder has failed to comply with the regulation. Theoretically, the FAA could impose fines. If so, the FAA would need to define its policy and how those fines would be calculated. The FAA might make a determination that it could rescind a design approval if a design approval holder were in non-compliance. Boeing considers that approach quite drastic; it would lead to an unnecessary grounding of a large number of airplanes worldwide. If the FAA makes this determination, the legal basis would need to be clearly defined and presented. We request that all these enforcement questions, and more, be fully addressed in any future rulemaking.

Summary

Boeing supports the FAA in its attempts to align and streamline the fuel tank safety and aging airplane programs. The actual and proposed extensions to compliance periods will enable an efficient incorporation of these programs in the commercial fleet.

However, we do not support a requirement that would mandate that design approval holders exclusively develop and provide data and documentation to support programs where an unsafe condition has not been identified. Current regulations require that design approval holders submit design changes for unsafe conditions -- a requirement that we embrace and endeavor to fulfill in a timely manner to ensure the safety concern is mitigated as soon as practicable. We also participate in industry initiatives, searching for improvements in aviation safety. We have participated numerous times in developing data, documentation, and maintenance program supplements to expedite support of improvements for operational safety, and we have done so voluntarily. Programs include Supplemental Structural Inspection Document (SSID) program, Repair Assessment Program (RAP), Mandatory Structural Modifications, Corrosion Prevention and Control Program, cargo compartment fire detection and suppression systems, flight deck security, wire inspection and maintenance programs, and the upcoming program on Widespread Fatigue Damage, to mention only a few

We consider that current FAA policies and procedures in use today to improve aviation safety have established the basis for the safest form of transportation in use throughout the world. We maintain that design approval holders developing data, documentation, and/or maintenance program supplements to support operator incorporation of safety enhancements would not provide any enhancement to aviation safety over the voluntary.